CLAIMS

1. An ink jet printhead comprising:

a plurality of nozzles;

a chamber corresponding to each of the nozzles respectively, the chambers adapted to contain an ejectable liquid; and,

at least one droplet ejection actuator associated with each of the chambers respectively, the droplet ejection actuator being adapted to eject a droplet of the ejectable liquid from the nozzle; wherein, the chamber is at least partially formed by an amorphous ceramic material.

2. An ink jet printhead according to claim 1 wherein the drop ejection actuator is a heater element configured for thermal contact with a bubble forming liquid within the chamber; such that, heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a droplet of the ejectable liquid through the nozzle corresponding to that heater element.

3. An ink jet printhead according to claim 1 wherein the amorphous ceramic material is silicon nitride.

4. An ink jet printhead according to claim 1 wherein the amorphous ceramic material is silicon dioxide.

5. An ink jet printhead according to claim 1 wherein the amorphous ceramic material is silicon oxynitride.

6. An ink jet printhead according to claim 2 wherein the ejectable liquid is the same as the bubble forming liquid.

7 An ink jet printhead according to claim 1 wherein the printhead is a pagewidth printhead.

8. An ink jet printhead according to claim 1 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

9. An ink jet printhead as claimed in claim 8 wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

10. An ink jet printhead as claimed in claim 1 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

11. An ink jet printhead as claimed in claim 4 wherein said conductive heating includes a thinned cross-section adjacent said first end.

12. An ink jet printhead as claimed in claim 1 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.

13. A printer system which incorporates a printhead, the printhead comprising:

a plurality of nozzles;

a bubble forming chamber corresponding to each of the nozzles respectively, the bubble forming chambers adapted to contain a bubble forming liquid; and,

at least one heater element disposed in each of the bubble forming chambers respectively, the heater elements configured for thermal contact with the bubble forming liquid; such that,

heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a drop of an ejectable liquid through the nozzle corresponding to that heater element; wherein,

the bubble forming chamber is at least partially formed by an amorphous ceramic material.

14. A printer system according to claim 13 wherein the drop ejection actuator is a heater element configured for thermal contact with a bubble forming liquid within the chamber; such that, heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a droplet of the ejectable liquid through the nozzle corresponding to that heater element.

15. A printer system according to claim 13 wherein the amorphous ceramic material is silicon nitride.

16. A printer system according to claim 13 wherein the amorphous ceramic material is silicon dioxide.

17. A printer system according to claim 13 wherein the amorphous ceramic material is silicon oxynitride.

18. A printer system according to claim 14 wherein the ejectable liquid is the same as the bubble forming liquid.

19 A printer system according to claim 13 wherein the printhead is a pagewidth printhead.

20. A printer system according to claim 13 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

21. A printer system as claimed in claim 20 wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

22. A printer system as claimed in claim 13 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

23. A printer system as claimed in claim 16 wherein said conductive heating includes a thinned cross-section adjacent said first end.

24. A printer system as claimed in claim 13 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.

25 A method of ejecting drops of an ejectable liquid from a printhead, the printhead comprising a plurality of nozzles;

a chamber corresponding to each of the nozzles respectively, the chambers adapted to contain an ejectable liquid; and,

at least one droplet ejection actuator associated with each of the chambers respectively; wherein, the chamber is at least partially formed by an amorphous ceramic material;

the method comprising the steps of:

placing the ejectable liquid into contact with the drop ejection actuator; and

actuating the droplet ejection actuator such that a droplet of an ejectable liquid is ejected through the corresponding nozzle.

27. A method according to claim 25 wherein the drop ejection actuator is a heater element configured for thermal contact with a bubble forming liquid within the chamber; such that, heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a droplet of the ejectable liquid through the nozzle corresponding to that heater element.

28. A method according to claim 25 wherein the amorphous ceramic material is silicon nitride.

29. A method according to claim 25 wherein the amorphous ceramic material is silicon dioxide.

30. A method according to claim 25 wherein the amorphous ceramic material is silicon oxynitride.

31. A method according to claim 26 wherein the ejectable liquid is the same as the bubble forming liquid.

32 A method according to claim 25 wherein the printhead is a pagewidth printhead.

33. A method according to claim 25 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

34. A method as claimed in claim 33 wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

35. A method as claimed in claim 25 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

36. A method as claimed in claim 29 wherein said conductive heating includes a thinned cross-section adjacent said first end.

37. A method as claimed in claim 25 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.